



Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

St. Johns Ditch

Water Body Segment at a Glance:

Counties:	Scott/New Madrid
Nearby City:	Sikeston
Length of impaired segment:	35 miles
Pollutant:	Bacteria
Source:	Urban/Rural Nonpoint Sources
Water Body ID:	3138



State Map Showing Location of Watershed

Scheduled for TMDL development: 2013

Description of the Problem

Designated beneficial uses of St. Johns Ditch

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category B

Use that is impaired

- Whole Body Contact Recreation – Category B

Standards that apply

- Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) state that the *E. coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) for Category A and 206 col/100 mL for Category B waters. This count is the geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation.

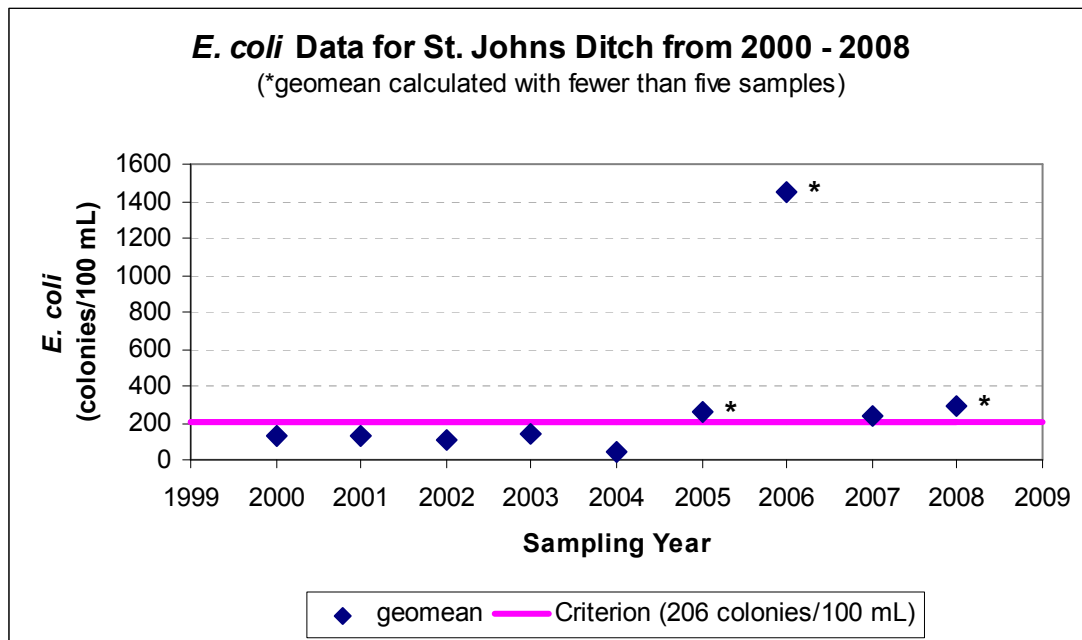
Background information and water quality data

St. Johns Ditch is in southeastern Missouri. While not technically in Missouri's bootheel, the low-lying area between the Mississippi and St. Francis Rivers, this ditch is part of the same drainage system. Starting in 1893, the entire landscape was transformed into farmland by logging and the construction of an extensive system of drainage ditches and diversion channels. Evidence for the bacteria impairment is based on data collected by U.S. Geological Survey from 2000-2008. St. Johns Ditch flows south through Sikeston, so urban as well as rural sources are implicated.

Excessive amounts of fecal bacteria in surface water used for recreation are an indication of an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated waters include gastrointestinal, respiratory, eye, ear, nose, throat and skin diseases. *E. coli*, are bacteria found in the intestines of warm blooded animals and are used as indicators of the risk of waterborne disease from pathogenic (disease causing) bacteria or viruses. Most *E. coli* strains are harmless, but some can cause serious illness in humans and are occasionally responsible for product recalls. The harmless strains are part of the normal flora of the intestines, and can benefit their hosts by preventing the establishment of pathogenic bacteria within the intestine^{1,2}. Missouri's bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The levels of risk correlating to these criteria are no more than eight illnesses per 1,000 swimmers in fresh water.

St. Johns Ditch is designated as Category B for the whole body contact recreation use, which means it has places deep enough for total immersion (i.e., swimming), but they may be on private lands or inaccessible to the public. The *E. coli* criterion of 206 col/100 mL for Category B waters is interpreted as the geometric mean of at least five samples collected during the recreational season (April 1 through October 31) of any given year. The last three years for which five samples are available during the recreational season are 2007, 2004 and 2003. The Category B criterion was exceeded in St. Johns Ditch in 2007.

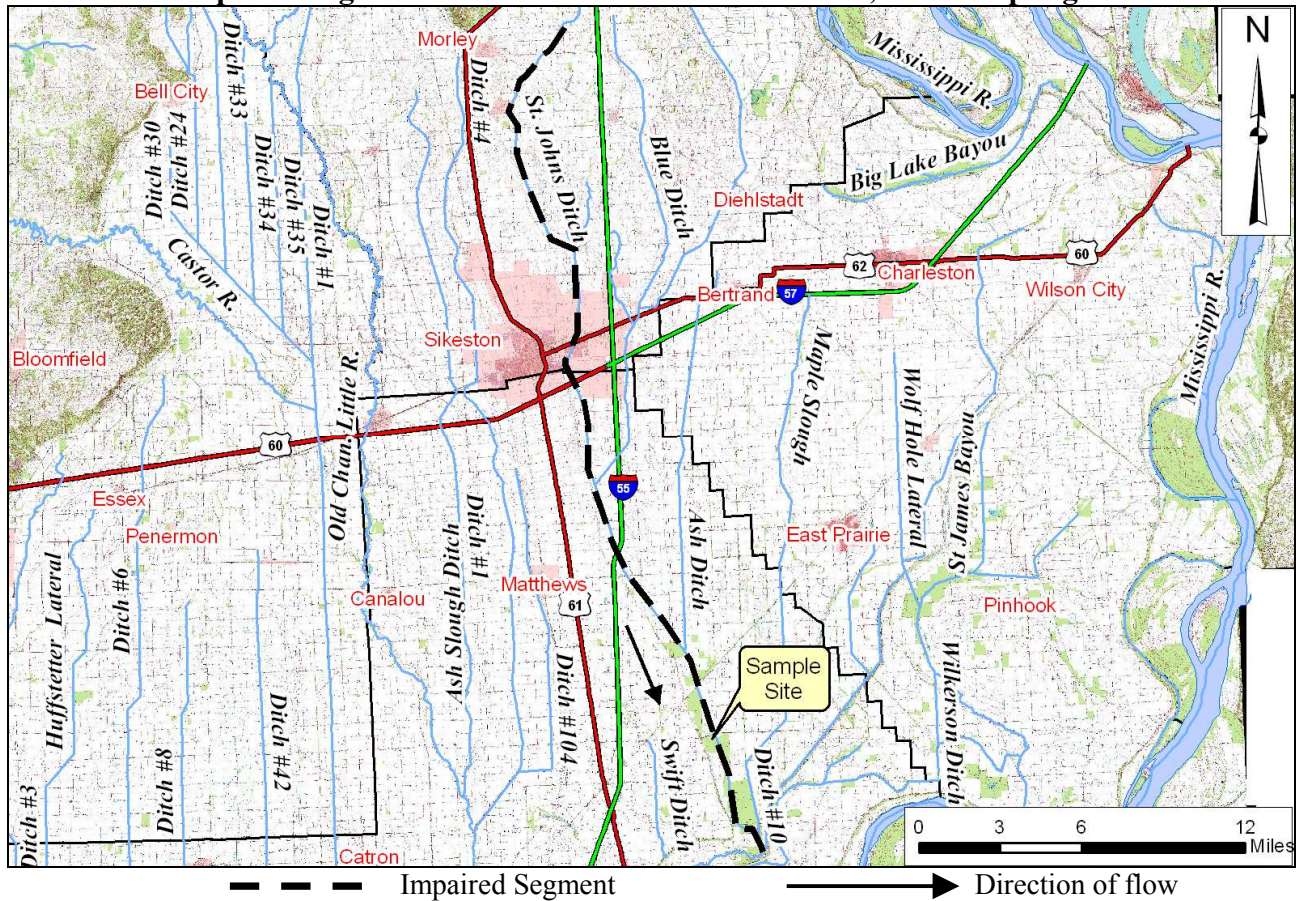
People can protect themselves from waterborne illness by avoiding contact with contaminated water. However, when swimming anywhere, it is wise to take common sense precautions. These include washing hands before eating, showering after swimming and avoiding exposure to questionable water if you have open cuts or wounds.



¹ Hudault S, Guignot J, Servin AL (July 2001). "[Escherichia coli strains colonising the gastrointestinal tract protect germfree mice against Salmonella typhimurium infection](#)". *Gut* **49** (1): 47–55

² Reid G, Howard J, Gan BS (September 2001). "Can bacterial interference prevent infection?" *Trends Microbiol.* **9** (9): 424–8.

Map showing St. Johns Ditch in southeast Missouri, with sampling site



Sample Site
St. John's Ditch nr. Henderson Mound

For more information call or write:

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